Complete Summary

GUIDELINE TITLE

Improving influenza, pneumococcal polysaccharide, and hepatitis B vaccination coverage among adults aged

BIBLIOGRAPHIC SOURCE(S)

Willis BC, Ndiaye SM, Hopkins DP, Shefer A. Improving influenza, pneumococcal polysaccharide, and hepatitis B vaccination coverage among adults aged PubMed

GUIDELINE STATUS

This is the current release of the guideline.

COMPLETE SUMMARY CONTENT

SCOPE

DISEASE/CONDITION(S)

- Influenza
- Pneumococcal disease
- Hepatitis B

GUIDELINE CATEGORY

Prevention

CLINICAL SPECIALTY

Family Practice
Infectious Diseases

Internal Medicine
Preventive Medicine

INTENDED USERS

Advanced Practice Nurses
Allied Health Personnel
Health Care Providers
Health Plans
Managed Care Organizations
Nurses
Patients
Physician Assistants
Physicians
Public Health Departments

GUIDELINE OBJECTIVE(S)

To provide recommendations for use of population-based interventions to improve the coverage of influenza, pneumococcal polysaccharide, and hepatitis B vaccines among adults aged <65 years at high risk, with occupational exposure, risky behavior, or medical conditions (targeted vaccination)

TARGET POPULATION

Adults aged <65 years at high risk, with occupational exposure, risky behavior, or medical conditions

INTERVENTIONS AND PRACTICES CONSIDERED

1. Interventions to enhance access to vaccination services
    - Expanded access in health-care settings
    - Reducing client out-of-pocket costs
2. Provider- or system-based interventions
    - Standing orders
    - Provider reminder systems
    - Provider assessment and feedback
3. Interventions to increase client demand for vaccination services
    - Client reminder systems
    - Client education
4. Combinations of the interventions listed above

MAJOR OUTCOMES CONSIDERED

- Coverage rates for influenza, pneumococcal polysaccharide, and hepatitis B vaccines in adult populations <65 years of age at high risk
- Vaccine-preventable disease incidence
- Morbidity and mortality rates for Influenza, pneumococcal disease, and hepatitis B

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Hand-searches of Published Literature (Primary Sources)
Hand-searches of Published Literature (Secondary Sources)
Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

Overview of Process

For each Community Guide topic, a multidisciplinary team conducts a review that includes the following steps:

- Developing an approach to organizing, grouping, and selecting the interventions
- Systematically searching for and retrieving evidence
- Assessing the quality and summarizing the strength of the body of evidence on effectiveness
- Translating the body of evidence on effectiveness into conclusions
- Assessing evidence about economic efficiency, applicability, other positive and negative effects, and barriers to implementation (if the effectiveness of the intervention has been established)
- Identifying and summarizing research gaps

Search Strategy

The team used multiple strategies to identify studies of interventions, starting with a search of 12 computerized databases (MEDLINE®, Embase, Psychlit, Sociological Abstracts, CabHealth, HealthStar, AIDSline, Occupational Safety and Health Database, Educational Resource Information Center [ERIC], PsycINFO®, Dissertation Abstracts, and Conference Papers Index).

Team members also reviewed reference lists of published studies and consulted with specialists in the field to identify relevant studies.

Inclusion Criteria

Studies were eligible for inclusion in the reviews of effectiveness if they:

- Were primary investigations of interventions selected for evaluation rather than, for example, guidelines or reviews
- Were published in English during January 1980--August 2001
- Compared outcomes among groups of persons exposed to the intervention with outcomes among groups of persons not exposed or less exposed to the intervention (i.e., the study design included a concurrent or before-and-after comparison)
- Were conducted in established market economies
- Measured differences or changes in vaccination coverage

- Were studies of influenza, pneumococcal polysaccharide, or hepatitis B vaccines
- Were studies of populations that either focused on or included persons aged <65 years and at high risk for infection, morbidity, or mortality

NUMBER OF SOURCE DOCUMENTS

- 2,461 titles and abstracts were identified, of which 60 met the inclusion criteria. Of these, 25 were excluded on the basis of limitations in their design or execution and were not considered further.
- 35 papers were considered qualifying studies

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Weighting According to a Rating Scheme (Scheme Not Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

The strength of the body of evidence of effectiveness was characterized as strong, sufficient, or insufficient on the basis of the number of available studies, the suitability of study designs for evaluating effectiveness, the quality of execution of the studies, the consistency of the results, and a determination of median effect size sufficient for the purpose of public health benefit.

METHODS USED TO ANALYZE THE EVIDENCE

Systematic Review with Evidence Tables

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Each study was evaluated by two independent reviewers using a standardized abstraction form and was assessed for suitability of the study design and threats to validity. Studies were characterized as having good, fair, or limited execution on the basis of the number of threats to validity. Studies with greatest or moderate design suitability and a good or fair quality of execution were considered qualifying studies and became part of the body of evidence.

Results for each outcome of interest were obtained from each study that met the minimum quality criteria. For this review, assessment of the effectiveness of an intervention was primarily based on the reported measurements of changes in coverage rates for influenza, pneumococcal polysaccharide, or hepatitis B vaccination. In studies with concurrent comparison groups, the overall change in vaccination coverage was calculated by using the difference in vaccine coverage change observed in the intervention and comparison groups. In studies without a concurrent comparison group (e.g., time series evaluations), the absolute percentage change was calculated from measurements of vaccination coverage in the study population pre- and postintervention. The median was used to summarize a typical measure of effect across the body of evidence for each outcome of interest; both the median and the range are reported. Refer to the original guideline document for detailed description of methods of calculations.

In its earlier review of universally recommended vaccines, the Task Force summarized the evidence on effectiveness of interventions implemented in combination within defined multicomponent categories (e.g., multicomponent interventions that include patient or provider education). The multicomponent body of evidence summarized in the current reviews consisted predominantly of studies evaluating unique, overlapping combinations of interventions. A multicomponent framework was initially developed in these reviews, but the Task Force later determined that a simplified, qualitative, and conceptual categorization of interventions within a "menu" format provides a more accurate and useful assessment of the evidence. Studies with similar but not identical combinations of interventions within or across categories were evaluated together as a body of evidence. Effectiveness was determined for each possible combination of categories. After effective category combinations were identified, specific interventions with sufficient evidence on effectiveness as part of a multicomponent effort were included as category options in the menu. This approach introduces an additional qualitative method for Task Force recommendations while acknowledging the work of previous investigators who developed and implemented intervention combinations on the basis of a conceptual understanding of vaccination demand and delivery.

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Other

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

Task Force recommendations are based primarily on the effectiveness of interventions as determined by the systematic literature review process. In making recommendations, the Task Force balances information about the effectiveness of an intervention with information about other potential benefits and potential harms. To determine how widely a recommendation should apply, the Task Force also considers the applicability of the intervention in various settings and populations. Finally, the Task Force reviews economic analyses of those interventions found to be effective and summarizes applicable barriers to intervention implementation. Economic information is provided to assist the reader with decision making but generally does not affect the Task Force's recommendation.

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Strength of Evidence of Effectiveness = Strength of Recommendation

The strength of each recommendation is based on the evidence of effectiveness (i.e., an intervention is recommended on the basis of either strong or sufficient evidence of effectiveness).

If insufficient evidence to determine effectiveness is found, this means that it was not possible to determine whether or not the intervention works based on the available evidence.

COST ANALYSIS

The guideline developers reviewed a published cost analysis.

METHOD OF GUIDELINE VALIDATION

Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

Subject matter experts served as consultants for the review. The Centers for Disease Control and Prevention (CDC) also conducts a peer review for articles published in the Morbidity and Mortality Weekly Report (MMWR) Recommendations and Reports series.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

The relationship between the strength of evidence of effectiveness and the strength of the recommendation is defined at the end of the "Major Recommendations" field.

Overview

The Task Force on Community Preventive Services conducted systematic reviews to evaluate the effectiveness of interventions to improve targeted vaccination coverage (i.e., coverage with vaccines recommended for some but not all persons in an age range on the basis of risk for exposure or disease) among adults aged <65 years at high risk when implemented alone (single-component interventions) and in combination with other interventions (multicomponent interventions). Three targeted vaccinations recommended for populations at risk are addressed in this review: influenza, pneumococcal polysaccharide, and hepatitis B. The Task Force identified evidence that certain combinations of interventions have improved vaccination coverage.

Recommendations

- To increase targeted vaccination coverage, the Task Force recommends provider reminders, when implemented alone, to improve targeted vaccination coverage.
- The Task Force also recommends a combination of interventions that include selected interventions from two or three categories of interventions (i.e., increasing community demand for vaccinations, enhancing access to vaccination services, and provider- or system-based interventions - see Table below).

Table: Menu format of intervention combinations recommended by the Task Force on Community Preventive Services to increase targeted vaccinations

One or both of these interventions to enhance access to vaccination services:

- Expanded access in health-care settings
- Reducing client out-of-pocket costs

Plus

One or more of these provider- or system-based interventions:

- Standing orders
- Provider reminder systems
- Provider assessment and feedback

And/or

One or both of these interventions to increase client demand for vaccination services:

- Client reminder systems
- Client education

Definitions:

The strength of the body of evidence of effectiveness was characterized as strong, sufficient, or insufficient on the basis of the number of available studies, the suitability of study designs for evaluating effectiveness, the quality of execution of the studies, the consistency of the results, and a determination of median effect size sufficient for the purpose of public health benefit.

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CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The recommendations are based on 35 qualifying studies, all of which had good or fair execution quality. In general, the strength of evidence of effectiveness

corresponds directly to the strength of recommendations (see the "Major Recommendations" field).

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

Improved coverage of influenza, pneumococcal polysaccharide, and hepatitis B vaccines among adults aged <65 years at high risk, with occupational exposure, risky behavior, or medical conditions (targeted vaccination)

POTENTIAL HARMS

Not stated

QUALIFYING STATEMENTS

QUALIFYING STATEMENTS

The recommendations in this report represent the work of the independent, nonfederal Task Force on Community Preventive Services (the Task Force). The Task Force is developing the Guide to Community Preventive Services (the Community Guide) with the support of the U.S. Department of Health and Human Services (DHHS) in collaboration with public and private partners. The Centers for Disease Control and Prevention (CDC) provides staff support to the Task Force for development of the Community Guide. The recommendations presented in this report were developed by the Task Force and are not necessarily the recommendations of DHHS, CDC, or other participating groups.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

Using the Recommendations in Communities and Health-Care Settings

Evidence reviews can support, but do not replace, the need to conduct local assessments in the process of program planning. Recommendations from the Task Force can assist program planners in matching effective intervention options to local needs, experience, administrative and social structures and regulations, and resources. In addition to the evidence on effectiveness, evidence on applicability can be used to assess the extent to which the interventions reviewed match a particular local situation. Economic evaluations of the recommended intervention and intervention combinations are limited in both quality and quantity.

The evidence on effectiveness identified in the review is divided among three different vaccines, certain targeted populations, and different community and health-care settings. Despite a limited body of evidence for selected conditions, the Task Force recommendations presented in this report should be broadly applicable (with some exceptions). For example, a limited number of studies were identified of population- based interventions to increase vaccination coverage for

hepatitis B among health-care workers. Although motivation to be vaccinated might vary with the vaccine (i.e., hepatitis B protects the health-care worker who is vaccinated, whereas influenza vaccine also protects those patients with whom the health-care worker comes in contact), the Task Force recommendation reflects confidence that effective efforts to increase influenza vaccine coverage among health-care workers can also be applicable to efforts to vaccinate health-care workers against hepatitis B virus (HBV).

Community-based options for interventions to increase vaccination coverage of persons at high risk for HBV are one important area in which substantial gaps remain in the evidence on effectiveness. Substantial differences in the hepatitis B vaccination schedule (a series of three injections), the target populations (persons with high-risk behaviors such as injection-drug use), and the settings for intervention (not primary healthcare settings) are unlikely to be overcome through the direct application of health-care system strategies demonstrated to be effective in other targeted vaccination efforts. Effective and recommended health-care--based interventions might not be applicable or might require considerable modification to fit community-based programs to increase HBV coverage in populations at high risk. Practitioners should ensure that interventions are selected or modified to address locally relevant barriers to vaccination. Researchers should consider more studies of this problem.

In 2000, the Advisory Committee on Immunization Practices updated their universal recommendations for annual influenza vaccination to include adults aged 50--64 years. Program planners dedicated to increasing influenza vaccination coverage within this population should consider recommendations from either or both Task Force reviews applicable. For initial efforts, the recommendations in the original, universal review provide effective and flexible intervention options. For enhancing initial program efforts, the information on intervention combinations recommended in this targeted review might be helpful.

Certain studies included in these reviews evaluated interventions or combinations of interventions implemented to increase vaccine coverage among all adult patients within a health-care system (including both patients with universal and high-risk indications). To match effective interventions to local needs, program planning should include an assessment of existing disparities, if any, in vaccine coverage among adult patients with universal and targeted indications.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Staying Healthy

IOM DOMAIN

Effectiveness
Patient-centeredness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

Willis BC, Ndiaye SM, Hopkins DP, Shefer A. Improving influenza, pneumococcal polysaccharide, and hepatitis B vaccination coverage among adults aged PubMed

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

2005 Apr 1

GUIDELINE DEVELOPER(S)

Task Force on Community Preventive Services - Independent Expert Panel

SOURCE(S) OF FUNDING

U.S. Department of Health and Human Services; Centers for Disease Control and Prevention (CDC)

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Task Force on Community Preventive Services

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FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

GUIDELINE STATUS

This is the current release of the guideline.

GUIDELINE AVAILABILITY

Electronic copies: Available in Portable Document Format (PDF) from the Centers for Disease Control and Prevention (CDC) Web site.

Print copies: Available from the Centers for Disease Control and Prevention (CDC), 1600 Clifton Road NE, MS E-30, Atlanta, GA, 30333.

AVAILABILITY OF COMPANION DOCUMENTS

None available

PATIENT RESOURCES

None available

NGC STATUS

This NGC summary was completed by ECRI on July 8, 2005. The information was verified by the guideline developer on July 19, 2005.

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